

Rule 21 Technical Workgroup Meeting

September 26-27, 2005

San Diego, CA

Attendees:

Name	Org	Phone	Email	26 th	27 th
William Steeley	EPRI	(650) 855-2203	wsteeley@epri.com	●	●
David Brown	SMUD	(916) 732-6660	Dbrown3@smud.org	●	●
Bill Cook	SDG&E	(858) 654-1189	wcook@semprautilities.com	●	●
Dave Michel	CEC-PIER	(916) 651-9864	dmichel@energy.state.ca.us	●	
John Dixon	SDG&E	(858) 654-1709	jdixon@semprautilities.com	●	●
Michael Edds	DG Energy Solutions	(619) 993-7828	medds@dg-energy.com	●	●
Greg Ball	PowerLight	(510) 868-1246	gball@powerlight.com	●	●
Mohammad Vaziri	PG&E	(510) 874-2470	myv1@pge.com	●	●
Jiab Tongsopit	UCSC Grad Student	(510) 847-1546	jiab@uscs.edu	●	●
Dave Redding	Riverside PU	(951) 826-5411	dredding@riversideca.gov		●
Chuck Whitaker	BEW Engr	(925) 867-3330	chuck.whitaker@bewengineering.com	●	●

1) General Business

Next meeting: Several members of the Tech workgroup are not available for the proposed Nov 16 next meeting date. November dates acceptable to Tech include 1, 2, 9, week of 14.

2) Introduction of New Items

Greg Ball would like to clarify disconnect switch requirements for campus situations.

3) Rule 21 Certification Effective Date

UL expects to have 1741 revised within the next two weeks (i.e., mid October). This suggests that and end of October effective date should provide sufficient time for actual adoption. The title for the revised UL 1741 will be changed to

UL Standard for Safety for Inverters, Converters, Controllers And Interconnection Systems Equipment For Use With Utility-Connected And Stand-Alone Distributed Energy Resources.

A combination of the expected date and the new title can be used to assure the desired coordination between the Rule 21 effective date and that of the UL standard intended to assure compliance with the revised certification requirement:

Proposed Language:

Equipment that is certified or that has been submitted to a Nationally Recognized Testing Laboratory (NRTL) for testing prior to the adoption of the revised Underwriters Laboratories 1741 titled "UL Standard for Safety for Inverters, Converters, Controllers And Interconnection Systems Equipment For Use With Utility-Connected And Stand-Alone Distributed Energy Resources" and that subsequently meets the previous Rule 21 certification requirements will continue to be accepted as certified equipment for interconnection applications submitted through the effective date of revised UL 1741. Adoption of the revised 1741 is expected by October 31, 2005 with an expected effective date of approximately April 1, 2007.

4) T134 Network Interconnection report

Schedule for Completion of Rule 21 Workgroup Network Interconnection Report

Date	Action	Who
September 26, 2005	Review status, outline report sections, assign data collection and writing tasks	All
November 15, 2005	Present and discuss each section	Section Champions
December 19, 2005	All Sections due for compilation into Final Draft	Section Champions
January 16, 2006	Circulate Final Draft for comments	Whitaker
February 1, 2006	Final comments finally due on Final Draft	All
March 1, 2006	Submit Final Report to CPUC	Whitaker/Prabhu

T134.1 - Basics Whitaker

Agreed to use the definitions from the DUIT report. May want to put some basic discussion and drawings into the Rule 21 report. Develop a general discussion of networks and alternatives (e.g., the methods used by SDG&E, LADWP, etc.).

T134.2 - Identify CA Networks Brown

Reviewed the latest version provided by David Brown. Additional information was provided by PG&E showing better breakdown of Spot and Grid networks. Information on the Long Beach Networks was lacking at the time of the meeting,

however, details have been forwarded that seem to fill in this one remaining information gap,

T134.3 – Identify US Stakeholders Whitaker

T134.4 – Other Information Sources Goh

T134.5 – Other Rules & Requirements Vaziri

Generally discussed the various other venues, rules, etc., including Massachusetts DG Collaborative report and web site, the Con Ed web site, Rules from Texas and New Jersey, etc.

T134.6 –Existing DR on networks Brow

Reviewed the list in the draft Network report. The list for California seems to be comprehensive. A separate list for DR on Networks outside of California, taken from the MDGC “verified” list, probably under-represents the total (it is likely that some of those in the larger “unverified” list

T134.7 – Problems and Solutions Vaziri

Reviewed MDGC and DUIT lists. Questions were raised and will be discussed. Moh Vaziri will develop a list based on this discussion.

T134.8 – Costs Steeley

New working group member, Bill Steeley, agreed to develop a list of cost categories and some bounds of costs.

T134.9 – Proposed Area Network IRP Vaziri

5) T138 Implementation of IEEE 1547.1

The group reviewed Section 5 (Type Tests) of IEEE 1547.1 and agreed that, compared to the test procedures currently in Rule 21 and UL 1741, the list of tests and the details for each test procedure provides for more comprehensive evaluation of the equipment under test. Based on this review the following changes are suggested

- Rewrite Section J.3a to reference IEEE 1547-2005 and delete table J.1 (J.1 was necessary to define tests for equipment not specifically listed in UL 1741, J.2
- delete sections J.3.b – J.3.g and J.7
- Rewrite Section J.4 to reference IEEE 1547-2005

Next, the group needs to review the Commissioning and Periodic test sections of 1574.1 and determine what changes need to be made to Sections J.5 and J.6 of Rule 21.

6) Further discussion of New Items.

Greg Ball presented a situation of multiple DG on separate buildings fed by a single PCC. Bringing GF disconnects back to a single location can require extensive trenching. A review of the Rule 21 language showed that there is no requirement that there be only one disconnect, nor that multiple disconnects be co-located. The consensus “reasonable approach” seemed to be accessible disconnects at each building with a sign at the PCC showing the locations of those switches.

A question had been raised by PG&E as part of their advice filing questioning the Rule 21 workgroup revision of IEEE 1547 language in a footnote for the allowable harmonics requirements that defines the basis current for the listed % harmonics. The 1547 language references “integrated” demand current, whereas the Rule 21 language described “average” current. It was agreed that the “average” language was more correct